

- III. "On a Method of Destroying the Effects of slight Errors of Adjustment in Experiments of Changes of Refrangibility due to Relative Motions in the Line of Sight." By E. J. STONE, F.R.S., Director of the Radcliffe Observatory, Oxford. Received January 17, 1881.

Let arrangements be made for the reversion of the prisms without any disturbance of the other optical arrangements, including, of course, the position of the cylindrical lens, if one be used. Any slight errors of adjustment which prevent the light from the star and the comparison light from falling upon the train of prisms under the same optical circumstances, so far as mere direction is concerned, will have opposite effects in the reversed positions of the prisms; but the separation of the emergent lights due to relative motion will remain unchanged by the reversal of the positions of the prisms.

If, therefore, the apparent change of refrangibility due to relative motion remains unchanged by the reversion of the prisms, all doubts about the effects of errors of adjustment will be removed. But if the results in the reversed positions of the prisms sensibly differ, then the existing errors of adjustment must be removed, or their effects allowed for by taking a mean of the results in reversed positions, before any reliance can be fairly placed upon the determination of relative motions in the line of sight.

A reversible spectroscope was arranged by me, and made by Mr. Simms, some years ago, but I have never since had an equatoreal, with a good driving clock, under my control with which the experiment indicated could be properly tried.

With the direct prisms now in use, the required reversion can be easily arranged. I am not likely, for some time, to have the use of a good equatoreal, and I, therefore, publish the plan with the hope that some one more fortunately situated may give it a fair trial.

The experiment is a crucial one, and, in my opinion, should be tried.

- IV. "On an Improved Bimodular Method of computing Natural and Tabular Logarithms and Anti-Logarithms to Twelve or Sixteen Places, with very brief Tables." By ALEXANDER J. ELLIS, B.A., F.R.S., F.S.A. Received January 17, 1881.

SECTION I.—NATURE OF THE BIMODULAR METHOD AND ITS
IMPROVEMENT.

The *Bimodulus* is a constant, which is exactly double of the modulus of any system of logarithms. The *Bimodular Method* is derived from